

Patent Claims

1. A profiled rail (1) for a suspension device having carriers (6,8) which can be plugged into the profiled rail (1) and on which articles can be suspended or set down, the profiled rail (1) being intended for fastening
5 horizontally on a carrying structure (9), by way of a passage (10) which extends into the profiled rail (1), in principle horizontally, from a front entry point (100),
characterized in that

- a) arranged within the profiled rail (1) is a conductor rail (2) with current conductors (24,27) which is supplied with electricity via a power supply (3);
- 10 b) the current conductors (24,27) are accessible from the passage (10) for the purpose of tapping electricity for supplying a consuming unit (7) which can be connected via a feed line (46).

2. The profiled rail as claimed in claim 1, characterized in that

- 15 a) the conductor rail (2) comprises an insulating profile (20) and current conductors (24,27) which are accommodated in wire channels (23,25) and can be tapped via access points (23,26) at least more or less over the entire axial extent of the current conductors (24,27) and in an at least largely uninterrupted manner; and
- 20 b) the conductor rail (2) is arranged in a current-conducting groove (15) which extends from the passage (10).

3. The profiled rail as claimed in claim 1 or 2, characterized in that

- a) the insulating profile (20) of the conductor rail (2) has outer contours (21)
25 which fit into complementary inner contours on the current-conducting groove (15);
- b) the current-conducting groove (15) is arranged, remote from the entry point (100), in the depth of the passage (10) and, in principle, perpendicularly to the latter; and
- 30 c) the access points (23,26) open, in principle, perpendicularly to the passage (10).

4. The profiled rail as claimed in claim 3, characterized in that

- a) the insulating profile (20) has an M-shaped cross section in principle;
- b) the two access points (23,26) are each located at the bottom within the side legs of the M-shaped cross section;
- 5 c) the wire channels (22,25) with the current conductors (24,27) provided therein are each located at the top within the side legs, in the profile tips; and
- d) the current conductors (24,27) can be tapped by an adapter (4) which can be pushed into the passage (10).

10

5. The profiled rail as claimed in one of claims 1 to 4, characterized in that

- a) the end of the passage (10) is defined by a base plate (11);
- b) the base plate (11) has a top extension (110) extending upward and a
15 bottom extension (113) extending downward, beyond the region of the incoming passage (10);
- c) adjacent to the base plate (11), a hook groove (16) extends upward, and an arresting groove (17) extends downwards, out of the passage (10).

20

6. The profiled rail as claimed in one of claims 1 to 5, characterized in that the passage (10) is bounded at the top by a top strut (13) and at the bottom by a bottom strut (12) and has:

- a) at the top, a slope which slopes upward in the direction of the entry point (110) and thus forms a top clearance (101),
- 25 b) at the bottom, an inclination which is inclined downward in the direction of the base plate (11) and thus forms a bottom clearance (102),
- c) in the bottom strut (12), in the vicinity of the entry point (100), a strip groove (18) for accommodating a non-slip and damping, preferably elastic extruded profile (180); and
- 30 d) at the end of the passage (10), an axially accessible raised molding (103), extending along the profiled rail (1), for tapping the ground contact (44) of the adapter (4).

7. The profiled rail as claimed in one of claims 1 to 6, characterized in that the profiled rail (1), furthermore, has:

- a) a supporting strut (14) which extends from the bottom strut (12), opens out into the bottom extension (113) and encloses a cavity (114) with the bottom strut (12);
- b) on the top strut (13), a downwardly extending tongue (130) with a tongue groove (131) located alongside it;
- c) on the bottom strut (12), a downwardly extending tongue (120) with a tongue groove (121) located alongside it;
- d) in each case one screw-connection channel (115,111) in the region of a supporting strut (14) extends from the bottom strut (12) and in the region where the top strut (13) opens out into the base plate (11);
- e) on the top extension (110), a notched line (112), preferably on both sides, has a marking;
- f) the tongue strips (120,130) are intended for being accommodated in tongue grooves (920) which are present in the edges of attached panels (9);
- g) the notched lines (112) serve as an orientation means for screw holes which may optionally be provided, and can be utilized in order for the construction comprising the carrying structure (9) with one or more profiled rails (1) introduced to be fastened directly or indirectly on a part of a building.

8. The profiled rail as claimed in one of claims 1 to 7, characterized in that the power supply (3) is formed by:

- a) a cutout (19) on the profiled rail (1), into which a connection terminal (30) is inserted;
- b) a plug coupling (31) comprising a bushing (33), which is positioned in the cutout (19) alongside the connection terminal (30), and a plug (32), which can be coupled to the bushing (33) from the outside and to which the current-supplying feed line (320) is connected; and
- c) a ground terminal (34) on the profiled rail (1).

9. The profiled rail as claimed in one of claims 1 to 8, characterized in that the carrier (8,6):

- a) as carrying arm (8) has at the plug-in end (801) of the bar part (80), at least one tongue element (81) which can be plugged into the passage (10) of the profiled rail (1) and has a bottom tapered portion (83) and an upwardly directed hook (82) which is intended for engaging in the hook groove (16); or
- b) the carrier (6) is in the form of a shelf of which the rear edge (60) can be plugged into the passage (10) of the profiled rail (1).

10. The profiled rail as claimed in one of claims 1 to 9, characterized in that the adapter (4) can be pushed separately into the passage (10) for power take-off or, inserted into an aperture (61) of a shelf (6), can be pushed into the passage (10) together with the shelf (6).

11. The profiled rail as claimed in one of claims 1 to 10, characterized in that the adapter (4) comprises:

- a) a rotatable pin (410);
- b) on the input side:
 - ba) contact lugs (42,43) which can be pivoted on the rotatable pin (410) and are intended for power take-off from the current conductors (24,27); and
 - bb) a tap (44) for the grounding conductor; and
- c) on the output side:
 - ca) line connections (420,430) and a ground-contact connection (440), which are connected to a feed line (46) to a consuming unit (7).

12. The profiled rail as claimed in one of claims 1 to 11, characterized in that the adapter (4) also comprises:

- a) a housing (40) with a bottom plate (400), a cover (401), an output connector (402) and an optional plate groove (403) in the housing (40) for insertion into the aperture (61) of a shelf (6), the output connector (402) merging into a conduit (460) for further cable routing to the consuming unit (7);

- b) a rotary knob (41), which is accessible to the user and is connected to the pin (410);
- c) a pin bearing (411) in the housing (40), and an inhibitor (412) acting on the pin (410); and
- 5 d) a catch (45), which is seated on the pin (410) and, in the connected state, when the contact lugs (42,43) butt against the current conductors (24,27) engages at least in one of the grooves (16,17); it being the case that
- e) the catch (45), in the disconnected state, is disengaged, with the result that the adapter (4) can be pushed into the passage (10) or drawn out of the
- 10 passage (10).

13. An adapter (4), in particular for use with a profiled rail (1) as claimed in one of claims 1 to 9, characterized in that the adapter (4) comprises:

- a) a rotatable pin (410);
- 15 b) on the input side:
 - ba) contact lugs (42,43) which can be pivoted on the rotatable pin (410) and are intended for power take-off from the current conductors (24,27) of a conductor rail (2) arranged in a profiled rail (1); and
 - bb) a tap (44) for the grounding conductor (103) of the profiled rail (1); and
- 20 c) on the output side:
 - ca) line connections (420,430) and a ground-contact connection (440), which are connected to a feed line (46) to a consuming unit (7).

25 14. The adapter (4) as claimed in claim 13, characterized in that the adapter (4) also comprises:

- a) a housing (40) with a bottom plate (400), a cover (401), an output connector (402) and an optional plate groove (403) in the housing (40) for insertion into the aperture (61) of a shelf (6), the output connector (402) merging into a conduit (460) for further cable routing to the consuming unit
- 30 (7);
- b) a rotary knob (41), which is accessible to the user and is connected to the pin (410);

- c) a pin bearing (411) in the housing (40), and an inhibitor (412) acting on the pin (410); and
- d) a catch (45), which is seated on the pin (410) and, in the connected state, when the contact lugs (42,43) butt against the current conductors (24,27) engages at least in one of the grooves (16,17); it being the case that
- e) the catch (45), in the disconnected state, is disengaged, with the result that the adapter (4) can be pushed into the passage (10) or drawn out of the passage (10).